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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/555,488	05/31/2000	HAOPING YU	RCA 88692	8354

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EXAMINER

YENKE, BRIAN P

ART UNIT PAPER NUMBER

2614

DATE MAILED: 05/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/555,488

Applicant(s)

YU ET AL.

Examiner

BRIAN P. YENKE

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(e). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Applicant's arguments filed 01 February 2002, with respect to claims 1-10, 13-14, 16-17 and 23-27 have been fully considered but they are not persuasive.

Applicant's arguments with respect to claims 11-12, 15, 18-22 and 28-30 have been considered but are moot in view of the new ground(s) of rejection, see below.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16-17 and 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by **Faroudja, US 5,754,248**.

In considering claims 16-17 and 23-27,

- 1) the claimed adaptively filtering...**is met by Vertical LPF 20 (Fig 5) (col 8, line 4-10)**
- 2) the claimed converting said filtered signal to a lower spatial resolution...**is met by downconverter 22 (Fig 5) (col 8, line 10-18), where for example, a now filtered 1500-line signal is downconverted to either a 525 or 625 line signal.**
- 3) the claimed MPEG encoding...**is met by compressor 24 (Fig 5) (col 8, line 18-26, col 6, line 30-34)**

4) the claimed conveying said encoded signal to an output channel **is met where the output of encoder (LPF, downconverter and compressor) provides the output video data which is processed by the decoder (Fig 8)**

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3a. Claims 1-10 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Faroudja US 5,754,248 in view of Legall et al., US 5,049,993.**

In considering claims 1-10 and 13-14,

a2/b1) the claimed adaptively filtering...**is met by Vertical LPF 20 (Fig 5) (col 8, line 4-10)**

a4/b2) the claimed converting said filtered signal to a lower resolution...**is met by downconverter 22 (Fig 5) (col 8, line 10-18)**

a5/b3) the claimed MPEG encoding...**is met by compressor 24 (Fig 5) (col 8, line 18-26, col 6, line 30-34)**

Art Unit: 2614

a6/b4) the claimed conveying said encoded signal to an output channel **is met where the output of encoder (LPF, downconverter and compressor) provides the output video data which is processed by the decoder (Fig 8)**

However, Faroudja does not specifically disclose converting the first video signal to a different format (a1) and then reconverting the filtered signal to the original format (a3).

Faroudja discloses a system which records or transmits motion picture film sources and non-film interlaced or progressively scanned video sources, any one of several standards (e.g., NTCS, PAL, HDTV/ATV, etc) (col 1, line 6-16), where depending on the origin and type of signal received and the destination of the signal, determines the particular encoding (Fig 1-5) and decoding (Fig 6-15) performed.

Legall et al., teaches converting a video sequence of a high resolution interlaced format to a video sequence of a lower resolution progressive format (col 1, line 6-10). Legall teaches due to bandwidth limitations in the telecommunications network, it is desirable to compress a video sequence to be transmitted.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Faroudja, which uses a universal system which transmits (encodes) and receives (decodes) signals of various standards would have been motivated by Legall to convert an interlaced signal to a progressive signal to reduce the bandwidth of the transmitted signal and then to

reconvert the signal in original format for encoding, since the conversion performed was to reduce the bandwidth of the transmitted signal and not the displayed signal.

3b. Claims 11-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Faroudja US 5,754,248** in view of **Legall et al., US 5,049,993** and **Scorse et al., US 5,128,776**.

In considering claims 11-12 and 15,
However Faroudja does not specifically disclose the claimed converting said filtered signal to a lower resolution signal having a resolution of 1280 x 1080 samples per frame. Faroudja discloses a downconverter 22 (Fig 5) (col 8, line 10-18) which may downconvert the received signal to 525 or 626 lines or other formats depending on the source and the display being used (col 2, line 37-42).

The conventional MPEG-2 standard, utilizes the MP@HL standard which may have as many as 1,152 active lines per image frame and 1,920 pixels per line and the MP@ML standard which defines a maximum picture size of 720 pixels per line and 567 lines per frame.

The changing/adjusting of a resolution of a video signal is notoriously well-known in the art, where the resolution of a video signal can be reduced by reducing the number of vertical lines and/or reducing the number of active pixels in a horizontal line. The arbitrary selection of a desired number of pixels, is as shown below, simply a design choice, based on transmission

Art Unit: 2614

means/requirements and display means/requirements, where the resolution of a signal, can take the form of an infinite number of possibilities, since the number of pixels utilized in an image can vary accordingly.

Specifically, Score US 5,128,776 discloses a system which permits the operator of a video image system to selectively transmit desired portions of a video image at an operator selected resolution, operator selected compression level and operator selected order of transmission of each of the portions.

Score discloses a control/processing unit 16 which processes the video data stored in storage 14 (Fig 1), where processing unit 16 reduces the resolution of the selected signal if desired by the operator (col 4, line 34-64). Where the reduction of the resolution of a video signal reduces the transmission time and thus reduces the bandwidth. The reduction in pixels can be performed in a predetermined manner, where the reduction can be performed by transmitting every other pixel, averaging a group (consecutive or non-consecutive) of pixels (col 6, line 39-60), where the number of active pixels can be reduced from the original resolution/signal.

Therefore, it would be obvious to one of ordinary skill in that art at the time of the invention to modify Faroudja's system which can have as many as 1920 active pixels per line, with Score, in order to reduce the number of active pixels from the maximum of 1920 pixels, which would reduce transmission time/bandwidth of the transmitted signal, and maintain picture granularity.

It is also noted by the examiner, the claimed 1280 pixels per line as claimed by applicant, is not supported by the specification by identifying the "Criticality" of the "1280" pixels per line. The examiner has interpreted the arbitrary number of pixels, 1280 in this instance could also be less pixels, i.e., 1270, 1050 or more pixels 1290, 1440 etc.

3c. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Faroudja, US 5,754,248** in view of **Scorse et al., US 5,128,776**.

In considering claim 18,

- 1) the claimed adaptively filtering... **is met by Vertical LPF 20 (Fig 5) (col 8, line 4-10)**
- 3) the claimed MPEG encoding... **is met by compressor 24 (Fig 5) (col 8, line 18-26, col 6, line 30-34)**
- 4) the claimed conveying said encoded signal to an output channel **is met where the output of encoder (LPF, downconverter and compressor) provides the output video data which is processed by the decoder (Fig 8)**

However Faroudja does not specifically disclose the claimed converting said filtered signal to a lower resolution signal having a resolution of 1280 x 1080 samples per frame.

FOR MOTIVATION SEE CLAIM 11, ABOVE.

3d. Claims 19-22 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lim, US 5,444,491** in view of **Scorse et al., US 5,128,776**.

In considering claims 19-22 and 28-29,

- 1) the claimed decoding said signal to produce a decoded signal... **is met by receiver 12 (Fig 1) where channel decoder 34 outputs image information to image decoder 36 and transmission format identification to decoder 38 (col 6, line 1-15)**
- 2) the claimed determining the image resolution... **is met by image decoder 36 (Fig 1)**
- 4) the claimed conveying said converted signal to an output device **is met by format transformation means 40 which supplies the transformed image to display 42 (col 6, line 5-10)**

However, Lim does not specifically disclose a 1280x1080 format.

Lim discloses a system which transmits/receives various transmission format (Table 1 and 2). Lim also discloses that the number of active lines of pixels in the transmission formats can vary from those listed in the Tables (col 8, line 30-34). Lim discloses that various picture formats can be utilized by conserving the Number of pixels per second keeping the bandwidth within the 6MHz channel for HDTV. Lim discloses the use of HDTV (MPEG-2)but does not disclose the MPEG specification which details the maximum number of lines/pixels per line that can be used.

The changing/adjusting of a resolution of a video signal is notoriously well-known in the art, where the resolution of a video signal can be reduced by reducing the number of vertical lines and/or reducing the number of active pixels in a horizontal line. The arbitrary selection of a desired number of pixels, is as shown below, simply a design choice, based on transmission

Art Unit: 2614

means/requirements and display means/requirements, where the resolution of a signal, can take the form of an infinite number of possibilities, since the number of pixels utilized in an image can vary accordingly.

Specifically, Scorse US 5,128,776 discloses a system which permits the operator of a video image system to selectively transmit desired portions of a video image at an operator selected resolution, operator selected compression level and operator selected order of transmission of each of the portions.

Scorse discloses a control/processing unit 16 which processes the video data stored in storage 14 (Fig 1), where processing unit 16 reduces the resolution of the selected signal if desired by the operator (col 4, line 34-64). Where the reduction of the resolution of a video signal reduces the transmission time and thus reduces the bandwidth. The reduction in pixels can be performed in a predetermined manner, where the reduction can be performed by transmitting every other pixel, averaging a group (consecutive or non-consecutive) of pixels (col 6, line 39-60), where the number of active pixels can be reduced from the original resolution/signal.

Therefore, it would be obvious to one of ordinary skill in that art at the time of the invention to modify Lim's system which can have as many as 1920 active pixels per line, with Scorse, in order to reduce the number of active pixels from the maximum of 1920 pixels, which would reduce transmission time/bandwidth of the transmitted signal, and maintain picture granularity.

It is also noted by the examiner, the claimed 1280 pixels per line as claimed by applicant, is not supported by the specification by identifying the "Criticality" of the "1280" pixels per line. The examiner has interpreted the arbitrary number of pixels, 1280 in this instance could also be less pixels, i.e., 1270, 1050 or more pixels 1290, 1440 etc.

In considering claim 30,

The examiner takes "OFFICIAL NOTICE" in regards to video information being broadcast satellite information. Video information may be received from many sources, i.e., VCR, Antenna, Cable, Satellite, Computer/PC etc... Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to receive/transmit video information which is broadcast satellite information.

Double Patenting

4. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefore ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

4a. Claims 28-29 is provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1 of copending Application No. 09/602925. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Applicant Arguments

- a) Regarding claims 16, 17 and 23-27, the applicant has amended the claim to now read, "lower spatial resolution signal". Applicant states that Faroudja only converts the signal in the temporal domain and does not convert to a lower spatial resolution signal.
- b) Regarding claims 1-15, applicant states Legall and Faroudja fail to disclose or suggest reversion of the filtered signal to its original signal prior to converting to a lower resolution and encoding.

Examiners Response

- a) The examiner disagrees. Given the broadest interpretation of the claimed invention, Faroudja as stated above in the rejection, downconverter 22 (Fig 5) (col 8, line 10-18), downconverts a (for example) filtered 1500-line signal to either 525 or 625 line signal, thus lowering the spatial resolution of the signal, from 1500 lines to 525 or 625.
- b) The examiner agrees that Legall nor Faroudja specifically disclose reversion, however as stated above, in the rejection the reduction of resolution of a transmitted signal is well-known in the art, and depending on the medium/receiver or display used determines whether a signal is converted to a particular resolution, whether the original

Art Unit: 2614

resolution or different resolution. It would be clearly obvious to one of ordinary skill in the art, to reconvert a signal into an original form, where the original signal was converted to a different form using a predetermined method.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (703)305-4795.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231


or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 305-4700.

B.P.Y.

14 MAY 2002


JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600